

IN THE CLAIMS

1. (Canceled).

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Newly Amended) A method for use in a receiver for receiving a plurality of data signals transmitted over a shared spectrum in a time slot in a time division duplex communication system using code division multiple access, the method comprising:

receiving a combined signal over the shared spectrum in the time slot;
estimating a received power level for each data signal;
selectively grouping data signals of the plurality of data signals based on in part the received power level of the data signals into at least one group; and
separately detecting data within each group for that group's data signals; and wherein the estimating the received power level for each data signal is based on in part a power level of a training sequence associated with each data signal.

6. (Newly Amended) A method for use in a receiver for receiving a plurality of data signals transmitted over a shared spectrum in a time slot in a time division duplex communication system using code division multiple access, the method comprising:

receiving a combined signal over the shared spectrum in the time slot;
estimating a received power level for each data signal;

selectively grouping data signals of the plurality of data signals based on in part the received power level of the data signals into at least one group; and
separately detecting data within each group for that group's data signals; and
~~The method of claim 5~~ wherein the estimating the received power level for each data signal is based on in part apriori knowledge at the receiver.

7. (Canceled).

8. (Canceled).

9. (Original) The method of claim 5 wherein the selectively grouping data signals groups data signals within a certain threshold power level into a group.

10. (Original) The method of claim 9 wherein the certain threshold power level is one decibel.

11. (Newly Amended) A method for use in a receiver for receiving a plurality of data signals transmitted over a shared spectrum in a time slot in a time division duplex communication system using code division multiple access, the method comprising:

receiving a combined signal over the shared spectrum in the time slot;

estimating a received power level for each data signal;

selectively grouping data signals of the plurality of data signals based on in part the received power level of the data signals into at least one group; and
separately detecting data within each group for that group's data signals; and

wherein the selectively grouping data signals groups data signals within a certain threshold power level into a group and ~~The method of claim 9 wherein the~~ certain threshold is adjusted to achieve a desired bit error rate at the receiver.

12. (Original) The method of claim 5 further comprising forcing all of the data signals into a single group to override the step of selectively grouping.

13. (Original) The method of claim 5 further comprising forcibly grouping each data signal into its own group to override the step of selectively grouping.

14. (Canceled).

15. (Canceled).

16. (Canceled).

17. (Canceled).

18. (Newly Amended) A receiver for use in a time division duplex communication system using code division multiple access, the system communicating using multiple communication bursts in a time slot, the receiver comprising:

an antenna for receiving radio frequency signals including the multiple communication bursts;

a demodulator for demodulating radio frequency signals to produce a baseband signal;

a channel estimation device for estimating a channel response for the bursts;

a successive interference cancellation joint detection (SIC-JD) device comprising:

a first joint detection block for detecting data within the baseband signal for a first group of bursts of the multiple bursts;

a first interference construction block for constructing an estimate of interference of the first group bursts;

a subtractor for subtracting the first group interference from the baseband signal; and

a second joint detection block for detecting data within the subtracted signal for a second group of bursts of the multiple bursts;

a first matched filter for processing the baseband signal to match symbol responses of the data signals in the first group; and

a second matched filter for processing the subtracted signal to match symbol responses of the data signals in the second group; and

wherein an output of the first and second joint detection blocks are soft symbols, the SIC-JD device further comprising a first and second soft to hard decision block for converting the first and second joint detection block outputs into hard symbols.

19. (Original) The receiver of claim 18 wherein the SIC-JD device further comprises:

a plurality of additional joint detection blocks for detecting data for additional groups of bursts of the multiple bursts.

20. (Canceled).

21. (Canceled).

22. (Newly Amended) A device for use in a receiver of a time division duplex communication system using code division multiple access, the system communicating using multiple communication bursts in a time slot, the device comprising:

an input configured to receive a baseband signal associated with received bursts within a time slot;

a first joint detection block for detecting data within the baseband signal for a first group of bursts of the received bursts;

a first interference construction block for constructing an estimate of interference of the first group bursts;

a subtractor for subtracting the first group interference from the baseband signal; and

a second joint detection block for detecting data within the subtracted signal for a second group of bursts of the received bursts;

a first matched filter for processing the baseband signal to match symbol responses of the received bursts of the first group; and

a second matched filter for processing the subtracted signal to match symbol responses of the received bursts of the second group; and

wherein an output of the first and second joint detection blocks are soft symbols, the device further comprising a first and second soft to hard decision block converting the first and second joint detection block outputs into hard symbols.

23. (Original) The device of claim 22 further comprising additional joint detection blocks for detecting data for additional groups of bursts of the multiple bursts.

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24. (Canceled).

25. (Canceled).